

Fig. 1

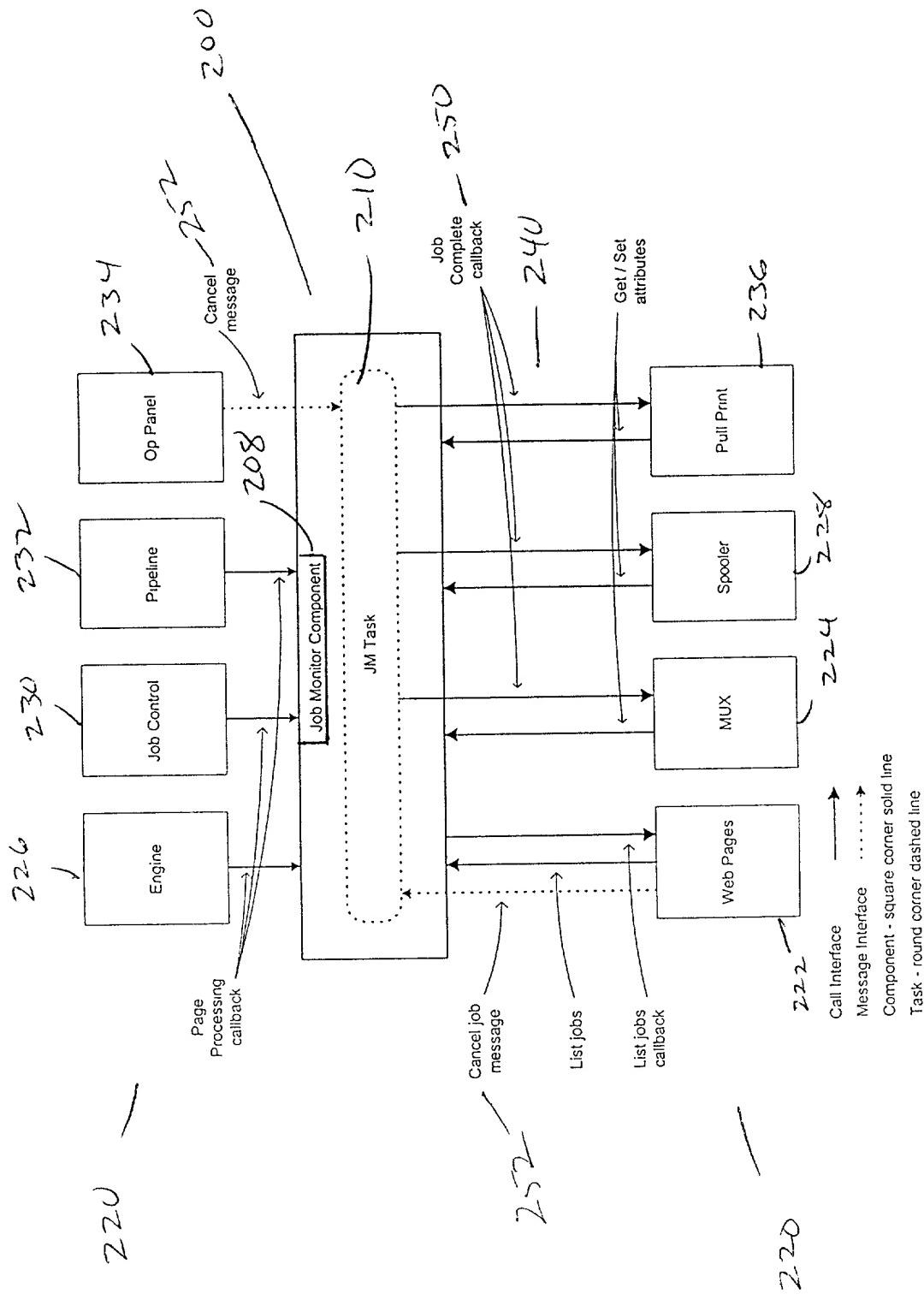


Fig. 2

Call Interface
 Message Interface
 Component - square corner solid line
 Task - round corner dashed line

Fig. 3

301

312

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| Attribute | Description | Initial value |
|--------------------------------------|--|----------------|
| Job ID | JobID | JobID |
| PCM ID | ID of the PCM through which the job was received | Null |
| Personality | Personality of the PCM1 through which the job was received | Null |
| PCM Priority | Priority of the PCM through which the job was received | Null |
| MUX receive byte count | Number of bytes received by the MUX through calls to the apsPDDData routine by a primary source PCM. This includes all PCMs except the despooler (it is not a primary source PCM). | 0 |
| (URL of the job) | URL of the job (null print only) | Null |
| Output request attribute for the job | Output requested by PCM for file jobPrinter, Spooler, Either | PRINTER |
| Output assignment attribute | Output assignment attribute for the job (Printer, Spooler, Wait, Rejected) | Null |
| File format indicator (PDF) | File format indicator (PDF) | NORMAL |
| Mux Job State | State of the job in the MUX | Unknown |
| Spooler Job State | State of the job in the spooler | NotSpooled |
| Interpreter Job State | State of the job in the interpreter | WaitingFor Job |
| Engine Job State | State of the job in the engine | WaitingFor Job |
| PMDD bytes read | This is the number of bytes read by the interpreter through calls to the PMDD Read routine. | 0 |
| MUX printer output status | Status of output to printer (not started, in progress, completed) | NotStarted |
| MUX Spooling status | Status of job being spooled (not started, in progress, completed) | NotStarted |
| Timestamp | Timestamp (printer up time) of last attribute update | Uptime |

MUX Job State Diagram

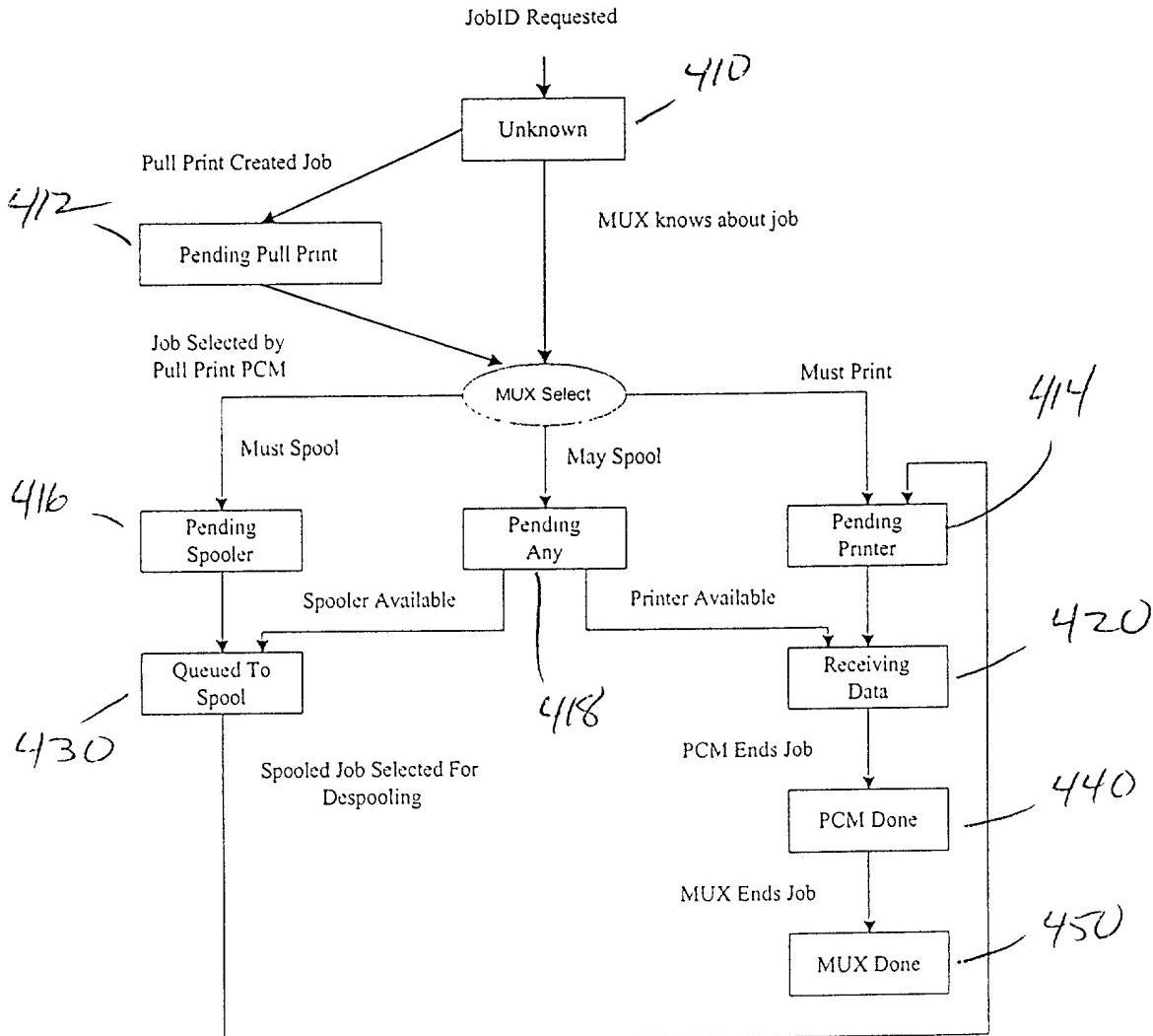


Fig. 4

500

1

Spooler State Diagram

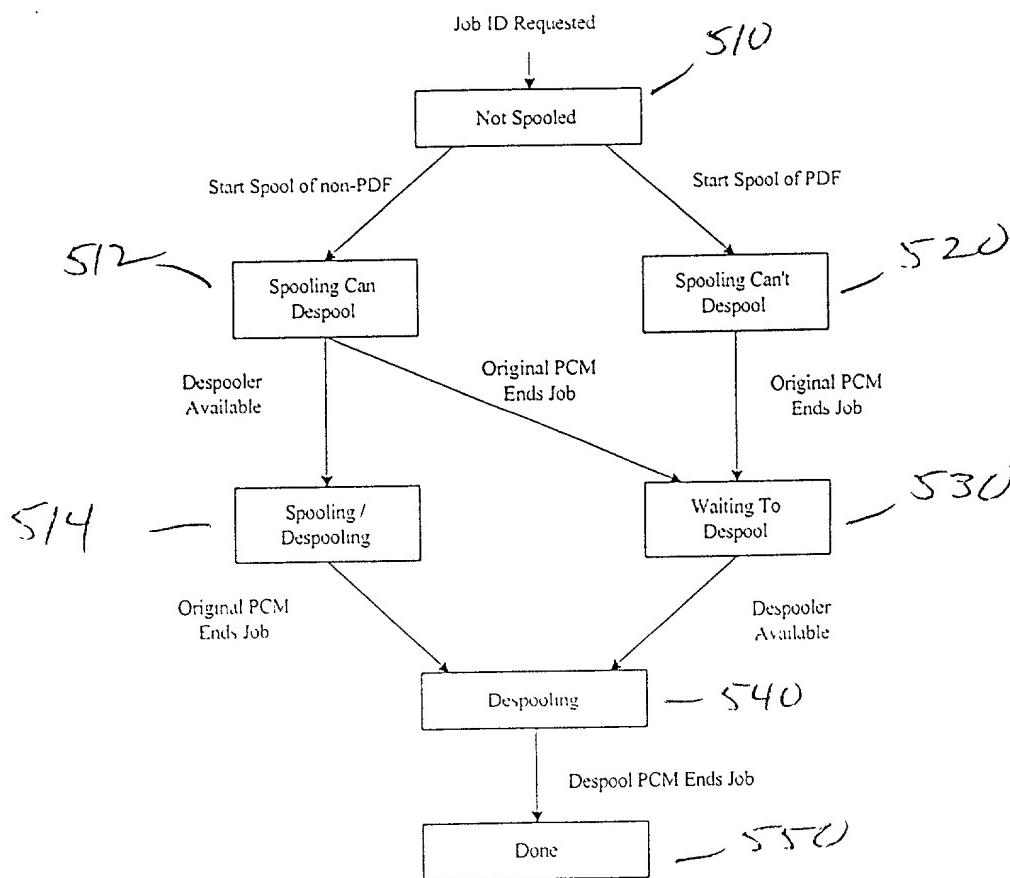


Fig. 5

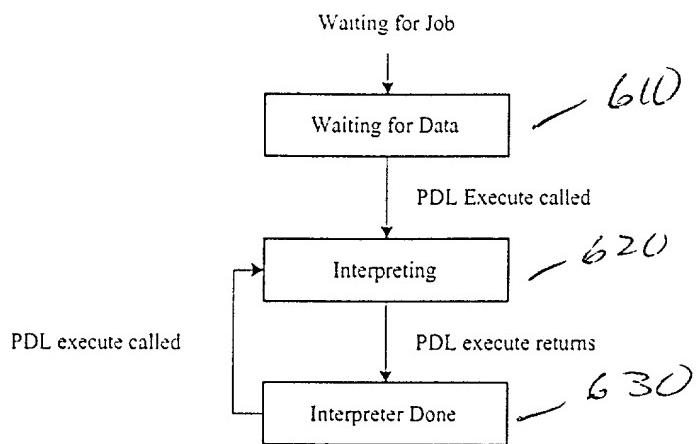


Fig. 6

700
/ 710

Engine Job State Diagram

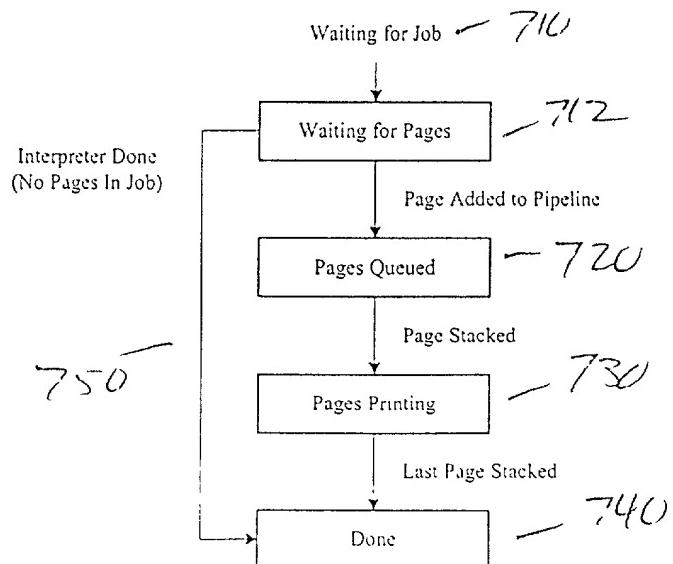


Fig. 7

800

| Process | From State | To State | Changed by |
|-------------|------------------------|------------------------|--------------------------|
| MUX | Unknown | Pending Printer | MUX OS Thread |
| | Unknown | Pending Any | MUX OS Thread |
| | Unknown | Pending Spooler | MUX OS Thread |
| | Unknown | Pending Pull Print | Pull Print SyncSubmitJob |
| | Pending Printer | Receiving Data | MUX OS Thread |
| | Pending Any | Receiving Data | MUX OS Thread |
| | Pending Spooler | Queued to Spool | MUX OS Thread |
| | Pending Any | Queued to Spool | MUX OS Thread |
| | Queued to Spool | Pending Printer | MUX OS Thread |
| | Receiving Data | Done | MUX apsPDIEnd |
| Spooler | Not Spooled | Spooling Can Despool | sp-open |
| | Spooling Can Despool | Spooling / Despooling | sp-coj |
| | Spooling Can Despool | Waiting to Despool | sp-coj |
| | Spooling / Despooling | Despooling | Despool PCM |
| | Not Spooled | Spooling Can't Despool | sp-open |
| | Spooling Can't Despool | Waiting to Despool | sp-coj |
| | Waiting to Despool | Despooling | Despool PCM |
| | Despooling | Done | Despool PCM |
| Interpreter | any | any | event announce callback |
| Engine | an7 | any | event announce callback |

Fig. 8

910

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914

| Attribute ID | Type | Rel. | RO/RW | IPP | SNMP | Notes |
|-----------------------------|------------------------------------|------|-------|-----|------|--|
| JM-ATTR-JOB-ID | Iht | 1 | RO | | | Set by JM. |
| JM-ATTR-PCM-ID | Int (Enum) | 1 | RW | | | Set by MUX |
| JM-ATTR-PCM-PERSONALITY | Int (Enum) | 1 | RW | | | Set by MUX |
| JM-ATTR-PCM-PRIORITY | Int | 1 | RW | | | Set by MUX. |
| JM-ATTR-SPOOLED-BYTES | Int | 1 | RW | | | Set by MUX |
| JM-ATTR-URL | String | 1 | RW | | | Set by WPP |
| JM-ATTR-OUTPUT-REQUEST | Int (Enum) | 1 | RW | | | Set by MUX. Enum will contain PRINTER, SPOOLER, WAIT, REJECTED. Others will be added if needed |
| JM-ATTR-FILE-FORMAT | Int (Enum) | 1 | RW | | | Set by MUX. Enum will contain at least UNKNOWN and PDF. Others will be added as needed |
| JM-ATTR-MUX-STATE | Int (Enum) | 1 | RW | | | Set by MUX. Enum will be created to list the possible states. |
| JM-ATTR-SPOOL-STATE | Int (Enum) | 1 | RW | | | Set by SPOOLER. Enum will be created to list the possible states. |
| JM-ATTR-INTERPRETER-STATE | Int (Enum) | 1 | RO | | | Set by JM. Enum will be created to list the possible states. |
| JM-ATTR-ENGINE-STATE | Int (Enum) | 1 | RO | | | Set by JM. Enum will be created to list the possible states. |
| JM-ATTR-JOB-STATE | Int (bitfields or array of int's?) | 1 | RO | Yes | Yes | Done by JM. Convert from JM-ATTR + STATE attributes |
| JM-ATTR-PAGES-SUBMITTED | Int | 1 | RO | | | Set by JM. This is the number of pages submitted into the pipeline by the interpreter (incremented once for each page, regardless of the copy count) |
| JM-ATTR-TOTAL-PAGES-IN-JOB | Int | 1 | RO | | | Set by JM. This is the total number of pages, including all copies of each page, which have been submitted into the pipeline. |
| JM-ATTR-TOTAL-PAGES-STACKED | Int | 1 | RO | | | Set by JM. This is the total number of pages that have been stacked by the engine (incremented for each copy of a page). |
| JM-ATTR-RECEIVED-BYTES | Int | 1 | RW | | | Set by MUX. The MUX should ensure that this is not doubled when we are spooling (ie, the bytes should only be counted when they are received from the host, not from the spooler). |
| JM-ATTR-BYTES-PROCESSED | Int | 1 | RW | | | Set by PMDD |
| JM-ATTR-LAST-MODIFIED | Int | 1 | RO | | | Set by JM. This is a timestamp (or count) used to tell if data modified since last checked this value. |
| JM-ATTR-CANCEL-INITIATOR | Int (Enum) | 1 | RW | Yes | Yes | Set by requestor of cancel. This is who requested the cancel (operator, user, device) |
| JM-ATTR-CANCEL | Int | 1 | RW | | | Set by JM (or IPDS?) 0 if not cancelling, 1 if cancel initiated |
| JM-ATTR-OPEN-COUNT | Iht | 1 | RO | | | Set by JM. Not read by others. Used to know how many people have this handle open (have not called destroy yet). |
| JM-ATTR-COPY-SET | Int | 1 | RO | | | Set by JM. This is the set for the last page stacked if doing collation |
| JM-ATTR-COPY-COUNT | Int | 1 | RO | | | Set by JM. This is the copy count for the last page stacked if doing collation. |
| JM-ATTR-COLLATE | Int | 1 | RW | | | True if collated job, false otherwise. |
| JM-ATTR-DUPLEX | Int | 1 | RW | | | True if job is duplex, false otherwise. |

Fig. 9